

# Slim USB Connector with Spring-Engaging Depressions, Stabilizing Dividers and Wider End Rails for Flash-Memory Drive

## Abstract

A slim Universal-Serial-Bus (USB) connector fits on only one side of the connector substrate in a standard female USB connector. Wobble or vertical play is reduced by locking depressions in the slim USB connector that engage metal springs on a metal case that surrounds the female USB connector, locking the two connectors together. Between metal contacts on the slim USB connector are dividers that help fill in gaps when the two connectors are connected together, further reducing play. End rails on the slim USB connector fill in gaps on the sides. The connector substrate of the slim USB connector can be separate or can be integrated with a circuit board that holds a flash memory chip and a USB controller chip. The connector is wider than the standard width for a better fit. A slim female USB connector for use with the slim male USB connector is also disclosed.